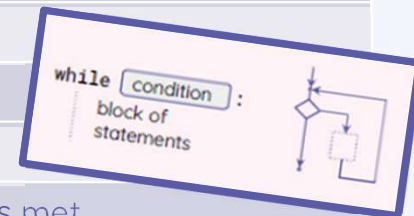


## Year 8 Computer Science Introduction to Python Knowledge Organiser

Key Word	Definition
Algorithm	A set of precise instructions, expressed in some sort of language (e.g. textual, visual).
Program	A set of precise instructions, expressed in a programming language.
Programming Language	A set of instructions written by a programmer to deliver instructions to the computer to perform and accomplish a task.
Input	Data entered into a program.
Output	Data from the program is shown to the user.
Variable	Used to store information to be referenced and manipulated in a computer program.
Assignment	A statement in computer programming that is used to set a value to a variable name.
Programming Environment	A text editor to create computer programs.
Program Translation	Converting a program into a code that the computer can execute.
Program Execution	The process of running a computer software program.
Interpreter	Translates source code into object code one instruction at a time.
Integer	A number that is not a fraction; a whole number.
String	A sequence of characters enclosed between the double quotes "...".
Execution	The process of running a computer software program, script, or command.
Walk-through	A review technique to find the defects, bugs and problems in the code.
Operator	A character that represents a specific mathematical or logical action or process.
Expression	Any valid unit of code that resolves to a value.

## Year 8 Computer Science Introduction to Python Knowledge Organiser

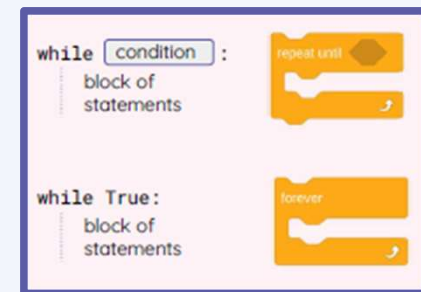
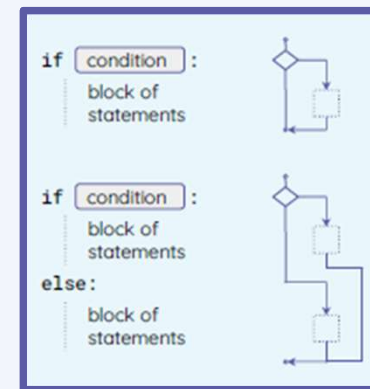
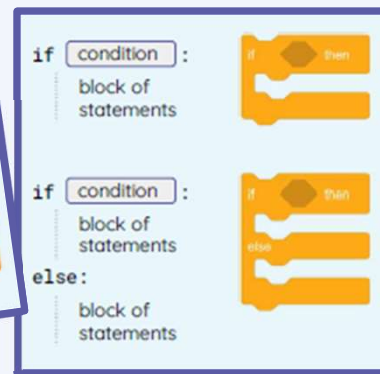
Key Word	Definition
Selection	A programming construct where a section of code is run only if a condition is met.
Relational Operators	Used to compare the values within an expression.
Logical Expression	A statement that can either be True or False.
Condition	Statements that are created by the programmer which evaluates actions in the program and evaluates if it's True or False.
Randomness	The generation of random numbers.
Execution	The process of running a computer software program, script, or command.
Multi-Branch Selection	A programming construct to change the control flow of a program based on values that match selected criteria.
Iteration	Repeating steps, or instructions , over and over again.
Boolean Operators	Used to compare the values within an expression.
Boolean Expression	A statement that can either be True or False.
Flag	Used as a signal in programming to let the program know that a certain condition has met.



```
print("What's your name?")
user = input()
print("Hello", user)
```

```
days = 365
print(days, "days in a year")
```

```
days = 7 * 31 + 4 * 30 + 28
print(days, "days in a year")
```



```
from random import randint
```

```
a = randint(2,12)  
b = randint(2,12)
```

```
print(a, "times", b, "=")  
answer = int(input())
```

```
product = a * b
```

```
if answer == product:  
    print("That is correct")  
else:  
    print("I am sorry")  
    print(a, "times", b, "is", product)
```

Generate two random integers a and b

Ask the user for the product of a and b

Calculate the correct answer

Check the user's answer and provide feedback

```
from random import randint
```

```
lucky = randint(1,20)
```

```
print("Guess my number:")  
guess = int(input())
```

```
if guess == lucky:  
    print("Amazing, you guessed it")  
else:  
    print("Sorry, it's not", guess)  
    print("My lucky number is", lucky)  
print("Nice playing with you")
```

```
from space import people  
number = people()
```

```
print("How many people...")  
guess = int(input())
```

```
if guess < number:  
    print("It's actually more than that.")  
elif guess > number:  
    print("It's actually less than that.")  
else:  
    print("That's right!")
```

```
print(number, "people in space now")
```

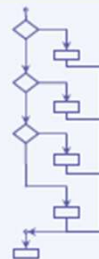
Retrieve the number of people in space

Prompt the user to guess

Check the answer and provide feedback

Display the number of people in space

```
if weather == "cloudy":  
    advice = "No sunglasses"  
elif weather == "rainy":  
    advice = "Get an umbrella"  
elif weather == "snowy":  
    advice = "Mittens and earmuffs"  
else:  
    advice = "No particular advice"  
print(advice)
```



```
lucky = 13
```

```
print("Guess my number:")  
guess = int(input())
```

```
if guess == lucky:  
    print("Amazing, you guessed it")  
else:  
    print("Sorry, it's not", guess)  
    print("My lucky number is", lucky)
```

```
print("Nice playing with you")
```

Pick a lucky number

Prompt the user to guess

Check answer and provide feedback

Say goodbye

```
lucky = 13
```

```
guessed = False
```

```
while guessed == False:
```

```
    print("Can you guess my lucky number?")  
    guess = int(input())  
  
    if guess == lucky:  
        print("Amazing, you guessed it")  
    else:  
        print("Sorry, it's not", guess)
```

```
print("Nice playing with you")
```

# Learning Graph

